

[TIN- AND ZINC-BASED SOLDER FILLERS FOR ALUMINUM BODY PARTS AND METHODS OF APPLYING THE SAME]

Abstract of Disclosure

One method of the present invention includes applying a paste-like fluxing agent to an aluminum body part; heating the fluxing agent to deoxidize the surface of the aluminum body part; applying a solder filler to the aluminum body part; and heating the solder filler to bond the solder filler to the aluminum body part. The melting point of the solder filler is at least 100 E C lower than the melting point of the aluminum body part. Another method includes forming a filler/flux mixture; applying the filler/flux mixture; and heating the filler/flux mixture to bond the solder filler to the aluminum body part. The disclosed solder fillers include tin-based alloys as follows: (1) 12-22% copper, 3-5% zinc and 75-85% tin; and (2) 3-5% copper, iron, cobalt, or nickel, 12-40% zinc and 55-85% tin and zinc-based solder filler alloys composed of 78-98% zinc and 2-22% aluminum.

